BEHAVIOR OF REINFORCED CONCRETE WALL PANEL SINGLE LAYER STEEL FABRIC USING CONCRETE WASTE AS AGGREGATE UNDER ECCENTRIC LOADING

By

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DECLARATION BY THE CANDIDATE

I Abdul Hakim bin Chulan, 2006876192, confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

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ABSTRACT

During the last decades, it has been recognized with growing concern that wastes from construction and demolition sectors are of large volume and that this volume is increasing year by year. Too many concrete wastes can cause problem and give effect on environmental issues. Concrete demolition waste has been proved to be an excellent source of aggregates for new concrete production. Nowadays, the method that uses to demolish concrete is simple such as dispose this waste at the landfill, incinerator and so on. So need the alternative way to sustain this scenario to avoid it become serious issues in the future. The existing research has study on this problem based on recycle the concrete waste as a main material to pore the concrete. Therefore there is need to do experiment on how concrete waste can be suit to mix with other material to become wall panel. The best solution to cater the concrete waste is by recycle the concrete waste and follows the Industrialised Building Standard (IBS) system that promoted by Construction Industry Development Board (CIDB). This research is conducted to determine the structural behavior of the reinforced concrete wall panel using recycle aggregate as the coarse aggregate. The wall panel is subjected to direct axial load through experimental work. Two wall panels reinforced with single layer steel fabric of type B385 (B7) with a dimensional of 1000 x 1500 x 75 mm (width: length: height) were prepared. Grade 30 Ordinary Portland Cement (OPC) with and recycle aggregate was been used. The wall panel was tested under compressive axial loading with eccentricity of 12.5 mm. The end conditions of the wall panel in this study are pinned-fixed. The experimental result shown the both wall panel failed in compressive shear and the ultimate load of sample is 1320.67 kN. The structural behavior of reinforced concrete wall panel using recycle aggregate is similar to the wall panel which used natural aggregate in term of carrying capacity, displacement profile and mode of failure.

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CHAPTER 3: METHODOLOGY